SEWAGE WORKS JOURNAL

VOLUME VI

JAN.–DEC.

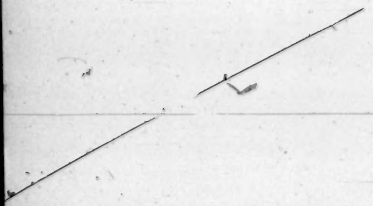
1934

Editor:
F. W. MOHLMAN

Business Manager:
WM. W. BUFFUM

Published by
Federation of Sewage Works Associations

LANCASTER PRESS, INC., LANCASTER, PA.



Author Index

Sewage Works Journal, Volume VI, 1934

Articles:

ALTEMUS, FRANK B. Operating Difficulties in a Sewage Treatment Plant 107

BABBITT, H. E. Disposal of Garbage with Sewage Sludge 1103

BACH, H. A Simple Device for Sampling Sludge 803

BANTA, A. PERRY, AND POMEROY, RICHARD. Hydrogen-Ion Concentration and Bicarbonate Equilibrium in Digesting Sludge 234

BAUMGARTNER, WM. H. Effect of Temperature and Seeding on Hydrogen Sulphide Formation in Sewage 399

BESSELIEVRE, EDMUND B. The Mechanization of Sewage Treatment 469

BLOODGOOD, DON E. See Calvert, C. K.

BORUFF, C. S. See Larson, T. E.

BRENDLEN, J. H. Present Status of Chemicals in Sewage Treatment 920

BUSWELL, A. M. See Larson, T. E.

CALVERT, C. K., AND BLOODGOOD, DON E. Aeration Experiments at the Indianapolis Activated Sludge Plant 1068

CALVERT, C. K., AND PARKS, ELLIOT H. The Population Equivalent of Certain Industrial Wastes 1159

CAMERON, A. B. Control of Odors from Grease Skimmings by Chlorination at Erie, Pennsylvania 100

CLELAND, RALPH R. Sludge Problems at State College 110

COHN, MORRIS M. Operation of the Sewage Treatment Works at Schenectady, New York, for the Year, 1933 275

CURRIE, C. H. Sludge Diestion 529

DANIELS, F. E. Sewage Plant Tests and Demonstrations 113

DEMARTINI, F. E. Slime Growths in Sewers 949

EDDY, H. P. Recent Developments in Sewage Treatment 262

EDWARDS, G. P. Filtration and Incineration as a Means of Sludge Disposal 444

FAIR, GORDON M. Digestion of Garbage .. 259

The Trickling Filter Fly (*Psychoda Alternata*) Its Habits and Control 966

FAIR, GORDON M., AND MOORE, EDWARD W. Time and Rate of Sludge Digestion, and Their Variation with Temperature 3

FERTIG, JOHN H. Discussion of Paper by John H. Fertig on "Application of the Sewer Rental Law" 115

FISHER, A. G. Digestor Overflow Liquor. Its Character and Effect on Plant Operation 956

GALLIGAN, W. E. Biologic Filtration 525

GEHM, H. W. See Rudolfs, Willem

GENTER, A. L. Adsorption and Flocculation as—Applied to Sewage Sludges 689

GLEASON, GEORGE H., AND LOONAM ALFRED C. Results of Six Months' Operation of Chemical Sewage Purification Plant 450

GLEESON, G. W. See Howard, E. F.

GREEN, HOWARD R. Application of the Sewer Rental Law to New Construction 514

GRIFFIN, GUY E. Sewage Treatment in Greenwich, Connecticut 928

HALLOCK, E. C. Water Tightness in Sewers and How to Secure It 306

HATFIELD, W. D. Operation of the Sewage Treatment Plant of the Decatur Sanitary District, 1928–33 489

HATFIELD, W. D., AND MORKERT, K. The Determination of the pH of Sewage Sludges 246

HENDERSON, C. N. See Ridenour, G. M.

HEUBI, THOMAS. Operating Difficulties at the Fredonia Sewage Disposal Plant .. 1152

HEUKELEKIAN, H. Bacterial Numbers in Activated Sludge Mixtures 676

Effect of Aeration on the Rate of Oxidation of Activated Sludge Mixtures 897

See Rudolfs, Willem

HINMAN, JACK J., JR. Laboratory Control of Sewage Treatment Plants 541

HOLDERBY, J. M., AND LEA, WM. L. The Relation of the pH of Dilution Water to the Biochemical Oxygen Demand of Various Wastes 734

HOUSER, P. J. Prechlorination of Sewage for Odor Control 509

HOWARD, E. F., GLEESON, G. W., AND MERRYFIELD, F. The Pollutional Character of Flax Retting Wastes 596

HUBBELL, GEORGE E. Experiments with Inlet Devices for Sedimentation Tanks .. 774

JONES, FRANK WOODBURY. Sludge Dewatering—Sand Filters and Vacuum Filters . 1109

KEEFER, C. E., AND KRATZ, HERMANN, JR. The Digestion of Garbage with Sewage Sludge 14

The Quantity of Garbage That Can Be Digested with Sewage Sludge 250

The Vacuum Filtration of Elutriated Sludge 845

KESSENER, H., AND RUDOLFS, WILLEM. Activated Sludge for Dairy Wastes 318

KESSENER, J. N. H., AND RIBBIUS, F. J. Comparison of Aeration Systems for the Activated Sludge Process 423

KNECHTGES, O. J., PETERSON, W. H., AND STRONG, F. M. The Lipids of Sewage Sludge 1082

KRATZ, HERMANN, JR. See Keefer, C. E.

LACY, I. O. See Rudolfs, Willem

LARSON, T. E., BORUFF, C. S., AND BUSWELL, A. M. A Carbon Study of Sludge Digestion Gas from Water 24

LAVERTY, F. J. County Sanitary District Determination and Sewer Easement Acquisition 294

LEA, WM. L. See Holderby, J. M.

LEVINE, MAX. Experiments in Trickling Filter Ventilation 517

LOONAM, ALFRED C. See Gleason, George H.

MCCLENAHAN, W. T. Paints for Sewage Works 762

MCNAMEE, PAUL D. See Theriault, Emery J.

MAHLIE, W. S. Sulphur in Sewage 547

MERRYFIELD, F. See Howard, E. F.

MOORE, EDWARD W. See Fair, Gordon M.

MORKERT, K. See Hatfield, W. D.

O'BRIEN, W. S. The Lima Sewage Treatment Plant 42

OWEN, MARK B. Two Years Operating Experience of Modern Chemical-Mechanical Sewage Treatment, Dearborn, Michigan 742

PARKS, ELLIOT H. See Calvert, C. K.

PETERSON, W. H. See Knechtges, O. J.

PHELPS, EARLE B. Studies of Pollution of New York Harbor and the Hudson River 998

PHELPS, EARLE B. *et al.* Research in Sewage Chemistry, Sewage Treatment and Stream Pollution. A Critical Review of the Literature of 1933 169

PHILLIPS, ROY L. Trouble Prevention in the Design of the Meadville Sewage Treatment Plant 103
POMEROY, RICHARD. See Banta, A. Perry
POTTER, ALEXANDER. Joint Sewerage Works for Twelve Municipalities in New Jersey 58
RIBBIUS, F. J. See Kessener, J. N. H.
RIDENOUR, G. M., AND HENDERSON, C. N. Stale Return Sludge as a Factor in the Activated-Sludge Process 36
RUCHHOFT, C. C. Studies on the Longevity of *Bacillus Typhosus* (*Eberthella typhi*) 1054
RUDOLFS, WILLEM. See Kessener, H.
RUDOLFS, WILLEM, AND HEUKELEKIAN, H. Relation Between Drainability of Sludge and Degree of Digestion 1073
RUDOLFS, WILLEM, AND LACY, I. O. Settling and Compacting of Activated Sludge 647
RUDOLFS, WILEM, ZIEMBA, JOHN, AND GEHM, H. W. Effect of Chlorine Dosage Upon the Percentage *B. Coli* Reductions 1094
RUF, H., AND WARRICK, L. F. Milk Waste Treatment Studies in Wisconsin 580
RYON, HENRY. Activated Sludge Sewage Treatment Works, Harlem Valley State Hospital 1139
SCOTT, WARREN J. Regulations Pertaining to Qualifications of Sewage Works Operators 90
SCOTT, WARREN J., AND VAN KLEECK, LE ROY W. Chlorine Disinfection of Sewage 784
SMIT, JAN. Bulking of Activated Sludge. II. On the Causative Organisms 1041
SMITH, J. I. Investigation of Rapid Methods for Sludge Solids Estimation 908
SPERRY, WALTER A. General Observations Covering the Aurora Sanitary District Plant 531
Tipping Sludge Bucket Meter Developed at Aurora, Illinois 797
STEVENSON, W. L. Plant Operation 1131
STREETER, H. W. A Formulation of Bacterial Changes Occurring in Polluted Water 208
Tendencies in Standards of River and Lake Cleanliness 721
STRONG, F. M. See Knechtges, O. J.
THERIAULT, EMERY J., AND MCNAMEE, PAUL D. Apparatus for the Determination of Dissolved Oxygen in Sludge-Sewage Mixtures 413
VAN DENBURG, J. W. Fine Screening, Incineration and Sterilization Plant, Construction and Features 309
VAN KLEECK, LE ROY W. See Scott, Warren J.
VOLK, J. A. Modernizing Traverse City's Sewage Disposal System 982
WARRICK, L. F. See Ruf, H.
WIETERS, A. H. Sewage Sedimentation ... Utilizing Existing Sewage Works to Best Advantage 504
YOUNG, W. W. Interurban Sanitation—Promotion, Legislation, Financing, and Organization 289
ZEIGLER, F. C. Trunk Sewer and Tunnel Location, Pumping Plants, Specifications and Construction 298
ZIEMBA, JOHN. See Rudolfs, Willem.

Reviews and Abstracts:

ACKLIN, O., BRAM, K., AND ZURCHER, M. A Contribution to the Treatment of Distillery Waste Waters 1027
ALLTON, ROBERT A. See Gregory, John H.
BACH, H. Determination of Moisture in Settled Sludge 340
Sewage Purification 1014
BACKHERMS, A. B. Akron Sewage Works 637
BELL, H. D. The Disposal of Surplus Activated Sludge 155
BENDER, E. A Sewage Treatment Plant Among Attractive Surroundings 148
BLEICH, S. D. Rainfall Studies for New York, N. Y. 631
BLEW, M. J. Most Recent Developments in the Chemical Treatment of Sewage ... 1206
BLUNK, H. Biological Purification of Sewage in Sprinkling Filters 613
BONNEY, ORRIS. See Gregory, John H.
BONO, UGO. Report on the Apulian Aqueduct (Italy), 1931–1932 641
BOYER, J. A. Treatment of Laundry Wastes 1197
BRAM, K. See Acklin, O.
BRIX, E. H. J., IMHOFF, KARL, AND WELDERT, R. Sewage Disposal in Germany 335
BRODE, KNOWLTON L. Storm Sewer Installation by Relief Work 1027
BRUNS, HAYO. See Sierp, F.
BUCHLER, WALTER C. Sewage Treatment at Shanghai 640
CALVERT, H. T. Report of the (British) Water Pollution Research Board for the Year Ended 30th June, 1933 820
CHAMBERLAIN, C. Drying and Disposal of Sludge at York Township Sewage Treatment Plant 1034
COTTERELL, G. T. Sewerage and Sewage Disposal of Sitting-Bourne and Milton 1024
CRAMER, ROBERT. A Sewage Disposal Plant Designed for Economy 1033
Sewage Disposal at Fort Atkinson, Wisconsin 832
DAKIN, MORRILL. Determining the pH of Sewage Sludge 833
DANIELS, P. N. Increasing the Salability of Sludge 1204
DARBY, W. ALLEN. Revolving Distributors for Trickling Filters 1025
DAU, K. The Causes of Sewer Gasification 828
DONALDSON, WELLINGTON. Dewatering Sewage Sludge by Vacuum Filters at Hagerstown, Maryland 836
Some Recent Developments in Sewage Treatment Practice 1033
DYSON, J. E. B., AND LLOYD, L. L. Remarks on the Flies Breeding in the Bacteria Beds at the Knostrop Sewage Works, Leeds 129
EDDY, H. P. See Metcalf, L.
EDWARDS, G. P. See Mohlman, F. W.
ESCARIO, JOSE LUIS. Municipal Sanitation and Sewage Purification 611
FALCK, TH. The Construction of Sewage Fish Ponds as Relief Work 829
FALES, ALMON L. Problem of Stream Cleansing 157
FERGUSON, HARRY F., AND WISELY, W. HOMER. Evaluating the Costs of Sludge Disposal Methods. Part I. The Economics of Sludge Digestion, Dewatering and Disposal 1201
GALLIGAN, W. E., AND LEVINE, MAX. Purification of Creamery Waste on Filters at Two Iowa Creameries 1015
GARNER, JOHN. Forty-first Annual Report, the West Riding of Yorkshire Rivers Board (Wakefield, England) 823
GAULTIER, R. The Treatment of Sewage on Bacterial Filters 1028
GIFFORD, R. D. The Clarification of Polluted Water With Particular Reference to Colliery Waste and Sewage 1185
GOODWIN, P. J. Renovating a Sewage Disposal Plant 148
GORE, WM. See Metcalf, L.
GORESLINE, H. E. See Levine, Max
GÖTZE, DIR. Sewage Pumps and Pressure Mains 1180
GOULD, RICHARD H. Construction of Wards Island Sewage Treatment Works 137

GREELEY, SAMUEL A., AND VELZEY, C. R. Evaluating the Costs of Sludge Disposal Methods. Part II. The Economics of Mechanical Sludge Dewatering and Disposal 1201
GREGORY, JOHN H., SIMPSON, R. H., BOXNEY, ORRIS, AND ALLTON, ROBERT A. Intercepting Sewers and Storm Stand-by Tanks at Columbus, Ohio 138
GRIEVES, WILLIAM H. Sewage Treatment at Sutton and Cheam 825
GRIFFIN, GUY E. Chlorination at the Sewage Treatment Plants of Greenwich, Connecticut 1198
HAASE, L. W. See Schulze-Forster, A.
HATFIELD, W. D. Decatur Cleanses the Sangamon River 159
HEILMANN, DR. ING., AND MULLER, DR. ING. Additional Settling Tanks for the Tafelwerder Plant in Halle 337
HEUKELEKIAN, H. Aerobic and Anaerobic Decomposition of Sewage Solids 147
HOWE, W. L. Cleaning Activated Sludge Air Diffusers 346
HUNT, L. W. Operating Results at Galesburg .....
HUSMANN, W. The Purification of Wastes from Starch Factories 342
IMHOFF, KARL. See Brix, E. H. J.
IPPOLITO, GIROLAMO. The Experimental Station at Foggia for the Purification and Utilization of Sewage in the First Two Years of Its Existence 1188
JACKSON, F. K., AND WAD, Y. D. Sanitary Disposal and Agricultural Utilization of Habitation Wastes by the Indore Process 1196
JOHNSON, W. SCOTT. Small Sewage Treatment Plants 839
JOHNSTONE-TAYLOR, F. Sewage Disposal in Britain 838
KEEFER, C. E. Operation of Pruss Pump at Baltimore Sewage Works 835
KILLAM, ELSON T. Hourly Load Variations as a Factor in Sewage Treatment Plant Operation 1019
KIRCHOFFER, W. G. The New Edgerton Sewage Works Help Clean Up Rock River Valley 1031
LANGE, N. A. Handbook of Chemistry 1180
LARSON, C. C. Annual Operation Report Sewage Treatment Works, Springfield Sanitary District, Springfield, Illinois, 1931 and 1932 149
LEE, FREDERICK G. Sewerage and Sewage Disposal in the Urban District of Eastleigh 618
LEVINE, MAX. See Galligan, W. E.
LEVINE, MAX, AND GORELINE, H. E. Effect of Bottom Ventilation on Purification by an Experimental Trickling Filter 1028
LLOYD, LL. See Dyson, J. E. B.
LOWE, A. S. The Logical Design of Separate Sludge Digestion Plant and Its Effect Upon Other Phases of Sewage Treatment 151
LUNDIE, M. The Self-Purification of Streams 1196
LUTHER, L. L. Chemical Purification at Freeport, Long Island 635
MCQUEEN, FRANK. Sewage Treatment, for Obtaining Park Irrigating Water 145
MAHR, DR. ING. The Harmful Effects of Sewage in Rivers 616
MAUZEY, PERCY E. Two Years' Experience with the Phoenix Activated Sludge Plant 1200
MENDELSOHN, I. W. Osaka, Japan's Great Industrial Center, Includes Modern Sewage Disposal in Vast Development Program 1032
Sanitation in Shanghai, China 345
MERKEL, WILHELM. The Flow Characteristics of Sewage Sludge 612
METCALF, L., AND EDDY, H. P., AND GORE, WM., NASMITH, G. G., AND STORRIE, WM. Major Sewerage Project for Toronto, Ontario 142
MOHLMAN, F. W., AND EDWARDS, G. P. Prefiltration Treatment of Sewage Sludge 641
MULLER, DR. ING. See Heilmann, Dr. Ing.
NASMITH, G. G. See Metcalf, L.
NERI, F. The Influence of the Purification by Activated Sludge and Sludge Digestion on the Bacteria of the Coli-aerogenes Group in Sewage 1194
PAYROW, H. G. Soundness Tests for Sewage Filter Media 630
PEARSE, LANGDON. Sewage Disposal by Way of the Illinois River 143
RHODES, H. E. Operating Results of the New Hagerstown, Maryland, Sewage Plant 1031
RIPPERGER, KURT. Gas Hazards in Sewers 611
ROBINS, B. G. S. Chlorine for Small Sewers 347
RUDOLFS, WILLEM. Sewage Treatment Developments in Continental Europe 836
SAYERS, R. R. Gas Hazards in Sewers and Sewage Treatment Plants 633
SCHULZE-FORSTER, A., AND HAASE, L. W. The Removal of Phenols from Sewage by Means of Compressed Air 826
SCOTT, WALTER. Effects of Gas Liquor on Sewage Purification 624
SEEGERT, WILHELM. The Centrifugal Screen
SIERP, F., AND BRUNS, HAYO. The Importance of Artificial Lakes for Maintaining the Purity of the Ruhr River 1182
SIMPSON, R. H. See Gregory, John H.
SMITH, H. G. Los Angeles Incinerates Sewage Screenings 1036
STEEL, EARNEST W. From Trickling Filter to Dunbar Type 639
STILSON, ALDEN E. Drying and Incineration of Sewage Sludge 833, 1026
STORRIE, WM. See Metcalf, L.
TAYLOR, H. W. Incinerator and Sewage Works Combined for Canajoharie 349
THOMPSON, JOHN T. Recent Developments in Methods of Sewage Works Analysis 153
THORNHILL, S. Advantages of the Bio-Aeration System of Sewage Purification 620
TOWNSEND, DARWIN WADSWORTH. Loss of Head in Activated Sludge Aeration Channels 629
TRAVAINI, D. Sludge Thickening at Phoenix, Arizona 834
UPTON, R. G. Low Cost Sewage Disposal Plant 640
VELZEY, C. R. See Greeley, Samuel A.
VIEHL, K. The Composition of Leipzig Sewage 338
VOKES, F. C. Experiments and Measurements in Connection with the Purification of Sewage 621
WAD, Y. D. See Jackson, F. K.
WALKER, ELTON D. The Sewage Treatment Plant at Carlisle, Pennsylvania .. 1198
WARRICK, L. F. Relative Importance of Industrial Wastes in Stream Pollution 158
WELDERT, R. See Brix, E. H. J.
WHITLOCK, ERNEST W. Modernizing and Enlarging an Activated Sludge Plant .. 1020
WILSON, R. C. Checking Corrosion 839
WISELY, W. HOMER. See Ferguson, Harry F.
ZIEGLER, F. C. Building Sewers Under Difficult Conditions 831
ZURCHER, M. See Acklin, O.

Subject Index

Sewage Works Journal, Volume VI, 1934

Articles:

Activated Sludge.
Aeration Experiments at the Indianapolis Plant. C. K. Calvert and Elliot H. Parks 1068
Bacterial Numbers in— Mixtures. H. Heukelekian 676
Bulking of—. II. On the Causative Organisms. Jan Smit 1041
Comparison of Aeration Systems for the— Process. H. J. N. H. Kessner and F. J. Ribbius 423
Effect of Aeration on the Rate of Oxidation of— Mixtures. H. Heukelekian 897
For Dairy Wastes. H. Kessener and Willem Rudolfs 318
Settling and Compacting of—. Willem Rudolfs and I. O. Lacy 647
Stale Return Sludge as a Factor in the— Process. G. M. Ridenour and C. N. Henderson 36
Adsorption and Flocculation as Applied to Sewage Sludges. A. L. Genter 689
Aeration Experiments at the Indianapolis Activated Sludge Plant. C. K. Calvert and Don E. Bloodgood 1068
Apparatus for the Determination of Dissolved Oxygen in Sludge-Sewage Mixtures. Emery J. Theriault and Paul D. McNamee 413
"Application of the Seyer Rental Law." Discussion of Paper by John H. Fertig—. 115
Application of the Sewer Rental Law to New Construction. Howard R. Green 514
Aurora, Illinois, Tipping Sludge Bucket Meter Developed at—. Walter A. Sperry 797
Aurora Sanitary District Plant, General Observations Covering the—. Walter A. Sperry 531

Bacterial Changes Occurring in Polluted Water. A Formulation of—. H. W. Streeter 208
Bacterial Numbers in Activated Sludge Mixtures. H. Heukelekian 676
Biochemical Oxygen Demand of Various Wastes, The Relation of the pH of Dilution Water to the—. J. M. Holderby and Wm. L. Lea 734
Biological Filtration. W. E. Gallinan 525
Bulking of Activated Sludge. II. On the Causative Organisms. Jan Smit 1041

Carbon Study of Sludge Digestion-Gas from Water. T. E. Larson, C. S. Boruff and A. M. Buswell 24
Chemical Treatment of Sewage.
Present Status of Chemicals in Sewage Treatment. J. H. Brendlen 920
Results of Six Months' Operation of Chemical Sewage Purification Plant. George H. Gleason and Alfred C. Loonam 450
Two Years Operating Experience of Modern Chemical-Mechanical Sewage Treatment, Dearborn, Michigan. Mark B. Owen 742
Chlorination at Erie, Pennsylvania, Control of Odors from Grease Skimmings by—. A. B. Cameron 100
Chlorine Disinfection of Sewage. Warren J. Scott and LeRoy W. Van Kleeck 784
Chlorine Dosage, Effect of—, Upon the Percentage *B. Coli* Reductions. Willem Rudolfs, John Ziemba and H. W. Gehm 1094
Comparison of Aeration Systems for the Activated Sludge Process. H. J. N. H. Kessner and F. J. Ribbius 423
Control of Odors from Grease Skimmings by Chlorination at Erie, Pennsylvania. A. B. Cameron 100
County Sanitary District Determination and Sewer Easement Acquisition. F. J. Laverty 294

Dairy Wastes, Activated Sludge for—. H. Kessener and Willem Rudolfs 318
Dearborn, Michigan, Two Years Operating Experience of Modern Chemical-Mechanical Sewage Treatment. Mark B. Owen 742
Decatur Sanitary District, Operation of the Sewage Treatment Plant of the—, 1928–1933. W. D. Hatfield 489
Determination of the pH of Sewage Sludges, The—. W. D. Hatfield and K. Morkert 246
Digestion of Garbage. Gordon M. Fair ... 259
Digestion of Garbage with Sewage Sludge. C. E. Keefer and Hermann Kratz, Jr. 14
Digestor Overflow Liquor. Its Character and Effect on Plant Operation. A. G. Fisher 956
Discussion of Paper by John H. Fertig, "Application of the Sewer Rental Law" 115
Disposal of Garbage with Sewage Sludge. H. E. Babbitt 1103
Dissolved Oxygen in Sludge-Sewage Mixtures, Apparatus for the Determination of—. Emery J. Theriault and Paul D. McNamee 413

Effect of Aeration on the Rate of Oxidation of Activated Sludge Mixtures. H. Heukelekian 897
Effect of Chlorine Dosage Upon the Percentage *B. Coli* Reductions. Willem Rudolfs, John Ziemba and H. W. Gehm 1094
Effect of Temperature and Seeding on Hydrogen Sulphide Formation in Sewage. Wm. H. Baumgartner 399
Erie, Pennsylvania, Control of Odors from Grease Skimmings by Chlorination at—. A. B. Cameron 100
Experiments in Trickling Filter Ventilation. Max Levine 517
Experiments with Inlet Devices for Sedimentation Tanks. George E. Hubbell 774

Filtration and Incineration as a Means of Sludge Disposal. G. P. Edwards 444
Fine Screening, Incineration and Sterilization Plant, Construction and Features. J. W. Van Denburg 309
Flax Retting Wastes, The Pollutional Character of—. E. F. Howard, G. W. Gleeson, and F. Merryfield 596
Flocculation as Applied to Sewage Sludges, Adsorption and—. A. L. Genter 689
Formulation of Bacterial Changes Occurring in Polluted Water, A—. H. W. Streeter 208

Garbage, Digestion of. Gordon M. Fair .. 259
General Observations Covering the Aurora

Sanitary District Plant. Walter A. Sperry 531
Greenwich, Connecticut, Sewage Treatment in—. Guy E. Griffin 928

Harlem Valley State Hospital, Activated Sludge Sewage Treatment Works. Henry Ryon 1139
Hudson River, Studies of Pollution of New York Harbor and the—. Earle B. Phelps 998
Hydrogen-Ion Concentration and Bicarbonate Equilibrium in Digesting Sludge. A. Perry Banta and Richard Pomeroy ... 234

Indianapolis Activated Sludge Plant, Aeration Experiments at the—. C. K. Calvert and Don E. Bloodgood 1068
Industrial Wastes, The Population Equivalent of Certain—. C. K. Calvert and Elliot H. Parks 1159
Interurban Sanitation—Promotion, Legislation, Financing, and Organization. W. W. Young 289
Investigation of Rapid Methods for Sludge Solids Estimation. J. I. Smith 908

Joint Sewerage Works for Twelve Municipalities in New Jersey. Alexander Potter 58

Laboratory Control of Sewage Treatment Plants. Jack J. Hinman, Jr. 541
Lima Sewage Treatment Plant, The—. W. S. O'Brien 42
Lipids of Sewage Sludge, The—. O. J. Knechtges, W. H. Peterson and F. M. Strong 1082

Meadville Sewage Treatment Plant, Trouble Prevention in the Design of the—. Roy L. Phillips 103
Mechanization of Sewage Treatment, The—. Edmund B. Besselievre 469
Milk Waste Treatment Studies in Wisconsin. H. Ruf and L. F. Warrick 580
Modernizing Traverse City's Sewage Disposal System. J. A. Volk 982

New Jersey, Joint Sewerage Works for Twelve Municipalities in—. Alexander Potter 58
New York Harbor and the Hudson River, Studies of Pollution of—. Earle B. Phelps 998

Operating Difficulties at the Fredonia Sewage Disposal Plant. Thomas Heubi 1152
Operating Difficulties in a Sewage Treatment Plant. Frank B. Altemus 107
Operation of the Sewage Treatment Plant of the Decatur Sanitary District, 1928–1933. W. D. Hatfield 489
Operation of the Sewage Treatment Works at Schenectady, New York, for the Year 1933. Morris M. Cohn 275

Paints for Sewage Works. W. T. McClenahan 762
Plant Operation. W. L. Stevenson 1131
Pollutional Character of Flax Ketting Wastes, The—. E. F. Howard, G. W. Gleeson and F. Merryfield 596
Population Equivalent of Certain Industrial Wastes. C. K. Calvert and Elliot H. Parks 1159
Prechlorination of Sewage for Odor Control. P. J. Houser 509
Present Status of Chemicals in Sewage Treatment. J. H. Brendlen 920
Psychoda Alternata, The Trickling Filter Fly, Its Habits and Control. Gordon M. Fair 966

Quantity of Garbage that Can be Digested with Sewage Sludge, The—. C. E. Keefer and Hermann Kratz, Jr. 250

Recent Developments in Sewage Treatment. H. P. Eddy 262
Regulations Pertaining to Qualifications of Sewage Works Operators. Warren J. Scott 90
Relation Between Drainability of Sludge and Degree of Digestion. Willem Rudo.fs and H. Heukelekian 1073
Relation of the pH of Dilution Water to the Biochemical Oxygen Demand of Various Wastes, The—. J. M. Holderby and Wm. L. Lea 734
Research in Sewage Chemistry, Sewage Treatment and Stream Pollution. A Critical Review of the Literature of 1933. Earle B. Phelps *et al* 169
Results of Six Months' Operation of Chemical Sewage Purification Plant. George H. Gleason and Alfred C. Loonam 450

Schenectady, New York, Operation of the Sewage Treatment Works at—, for the Year 1933. Morris M. Cohn 275
Sedimentation Tanks, Experiments with Inlet Devices for—. George E. Hubbell 774
Settling and Compacting of Activated Sludge. Willem Rudolfs and I. O. Lacy 647
Sewage.
Chlorine Disinfection of—. Warren J. Scott and LeRoy W. Van Kleeck 784
Effect of Temperature and Seeding on Hydrogen Sulphide Formation in—. Wm. H. Baumgartner 399
Prechlorination of, for Odor Control. P. J. Houser 509
Sulphur in—. W. S. Mahlie 547
Sewage Chemistry, Sewage Treatment and Stream Pollution, Research in—. A Critical Review of the Literature of 1933. Earle B. Phelps *et al* 169
Sewage Plant Tests and Demonstrations. F. E. Daniels 113
Sewage Sedimentation. A. H. Wieters 520
Sewage Sludge.
Adsorption and Flocculation as Applied to—. A. L. Genter 689
Determination of the pH of—. W. D. Hatfield and K. Morkert 246
Digestion of Garbage with—. C. E. Keefer and Hermann Kratz, Jr. 14
Disposal of Garbage with—. H. E. Babbitt 1103
Lipids of—, The. O. J. Knechtges, W. H. Peterson, and F. M. Strong 1082
Quantity of Garbage that Can be Digested with—, The. C. E. Keefer and Hermann Kratz, Jr. 250
Studies on the Longevity of *Bacillus Typhosus* (*Eberthella typhi*) in—. C. C. Ruchhoft 1054
Sewage Treatment and Stream Pollution, Research in Sewage Chemistry,— A Critical Review of the Literature of 1933. Earle B. Phelps *et al* 169
Sewage Treatment in Greenwich, Connecticut. Guy E. Griffin 928
Sewage Treatment Plant, Operating Difficulties in a—. Frank B. Altemus .. 107
Sewage Treatment Plants.
Aurora, Illinois. Walter A. Sperry 531
Decatur, Illinois. W. D. Hatfield 489
Fredonia. Thomas Heubi 1152
Harlem Valley State Hospital. Henry Ryon 1139
Lima, Ohio. W. S. O'Brien 42
Meadville, Pa. Roy L. Phillips 103
Schenectady, New York. Morris M. Cohn 275
Sewage Treatment Plants, Laboratory Control of—. Jack J. Hinman, Jr. 541

Sewage Treatment, Recent Developments in—. H. P. Eddy 262
Sewage Treatment, The Mechanization of—. Edmund B. Besselievre 469
Sewage Works Operators, Regulations Pertaining to Qualifications of—. Warren J. Scott 90
Sewage Works, Paints for—. W. T. McClenahan 762
"Sewer Rental Law, Application of the—." Discussion of Paper by John H. Fertig 115
Sewer Rental Law, Application of the—, to New Construction. Howard R. Green 514
Sewers, Slime Growths in—. F. E. DeMartini 949
Simple Device for Sampling Sludge, A—. H. Bach 803
Slime Growths in Sewers. F. E. DeMartini 949
Sludge.
A Simple Device for Sampling—. H. Bach 803
Filtration and Incineration as a Means of Sludge Disposal. G. P. Edwards .. 444
Hydrogen-ion Concentration and Bicarbonate Equilibrium in Digesting Sludge. A. Perry Banta and Richard Pomeroy 234
Relation Between Drainability of Sludge and Degree of Digestion. Willem Rudolfs and H. Heukelekian 1073
Vacuum Filtration of Elutriated—. C. E. Keefer and Hermann Kratz, Jr. 845
Sludge Dewatering—Sand Filters and Vacuum Filters. Frank Woodbury Jones . 529
Sludge Digestion. C. H. Currie 529
Sludge Digestion, Time and Rate of—, and Their Variation with Temperature. Gordon M. Fair and Edward W. Moore 3
Sludge Digestion-Gas from Water, A Carbon Study of—. T. E. Larson, C. S. Boruff, and A. M. Buswell 24
Sludge Problems at State College. Ralph R. Cleland 110
Sludge Solids Estimation, Investigation of Rapid Methods for—. J. I. Smith .. 908
Stale Return Sludge as a Factor in the Activated-Sludge Process. G. M. Ridenour and C. N. Henderson 36
State College, Sludge Problems at—. Ralph R. Cleland 110
Stream Pollution.
Research in Sewage Chemistry, Sewage Treatment and Stream Pollution. A Critical Review of the Literature of 1933. Earle B. Phelps *et al* 169
Studies of Pollution of New York Harbor and the Hudson River. Earle B. Phelps 998
Tendencies in Standards of River and Lake Cleanliness. H. W. Streeter .. 721
Studies of Pollution of New York Harbor and the Hudson River. Earle B. Phelps 998
Studies on the Longevity of *Bacillus Typhosus* (*Ebrithella typhi*) in Sewage Sludge. C. C. Ruchhoff 1054
Sulphur in Sewage. W. S. Mahlie 547

Tendencies in Standards of River and Lake Cleanliness. H. W. Streeter 721
Time and Rate of Sludge Digestion, and Their Variation with Temperature. Gordon M. Fair and Edward W. Moore 3
Tipping Sludge Bucket Meter Developed at Aurora, Illinois. Walter A. Sperry ... 797
Traverse City's Sewage Disposal System, Modernizing—. J. A. Volk 982
Trickling Filter Fly (*Psychoda Alternata*), Its Habits and Control, The—. Gordon M. Fair 966
Trickling Filter Ventilation, Experiments in—. Max Levine 517
Trouble Prevention in the Design of the Meadville Sewage Treatment Plant. Roy L. Phillips 103
Trunk Sewer and Tunnel Location, Pumping Plants, Specifications and Construction. F. C. Zeigler 298
Two Years Operating Experience of Modern Chemical-Mechanical Sewage Treatment, Dearborn, Michigan. Mark B. Owen 742

Utilizing Existing Sewage Works to Best Advantage. A. H. Wieters 504

Vacuum Filtration of Elutriated Sludge, The—. C. E. Keefer and Hermann Kratz, Jr. 845

Water Tightness in Sewers and How to Secure It. E. C. Hallock 306
Westchester County Sanitary Sewer Commission, The Organization and Construction of the—. A Series of Five Papers 289–309
Wisconsin, Milk Waste Treatment Studies in—. H. Ruf and L. F. Warrick 580

Editorials:

Dearborn Plant, The— 805
Dewatering Digested Sludge 1165
Elutriation of Sludge 1009
George W. Fuller 807
Hygienic Disposal of Sludge 1166
P. W. A. Board Approves Activated Sludge Process for Sanitary District of Chicago 601
Sewage Specialists 328
Sludge Index, The— 119

Federation Affairs:

Members of Federation of Sewage Works Associations and Subscribers to Journal 356
Officers of Local Associations, Members of Federation 124

Proceedings of Local Associations:

California Sewage Works Association, Sixth Annual Spring Conference 809
Seventh Annual Convention 1167
Central States Sewage Works Association, Seventh Annual Convention 1171
Maryland-Delaware Water and Sewerage Association, Eighth Annual Conference .. 814
Michigan Sewage Works Association, Summary of the Tenth Annual Conference 606
New England Sewage Works Association, Notice of Spring Meeting, 1934 334
Sixth Annual Meeting, 1934 1177
New York State Sewage Works Association, Sixth Annual Meeting 330
Spring Meeting 816
Notice of Fall Meeting, 1934 1013
Fall Meeting, 1934 1175
Officers of Local Associations, Members of Federation 124
Ohio Conference on Sewage Treatment, Eighth Conference 1174
Pennsylvania Sewage Works Association, Notice of Eighth Annual Conference .. 609
Eighth Annual Conference 1011
Wisconsin, School Held for Sewage Works Operators in— 332

Reviews and Abstracts:

Activated Sludge.
Cleaning Air Diffusers. W. L. Howe .. 346
Disposal of Surplus—. H. D. Bell 155
Influence of the Purification by Activated Sludge and Sludge Digestion on the Bacteria of the Coli-aerogenes Group in Sewage. F. Neri 1194
Loss of Head in Aeration Channels. Darwin Wadsworth Townsend 629
Modernizing and Enlarging an Activated Sludge Plant. Ernest W. Whitlock 1020

Additional Settling Tanks for the Tafelwerder Plant in Halle. Dr. Ing. Heilmann and Dr. Ing. Muller 337
Advantages of the Bio-Aeration System of Sewage Purification. S. Thornhill 620
Aerobic and Anaerobic Decomposition of Sewage Solids. H. Heukelekian 147
Akron Sewage Works. A. B. Backherms 637
Akron's Sludge as a Fertilizer. *Anon.* 1208
Annual Operation Report, Sewage Treatment Works, Springfield Sanitary District, Springfield, Illinois, 1931 and 1932. C. C. Larson 149
Annual Report, 41st, the West Riding of Yorkshire Rivers Board (Wakefield, England). John Garner 823
Apulian Aqueduct (Italy), Report on the—, 1931–32. Ugo Bono, M. P. 641
Assessing Damages for Sewage Pollution of Rivers. *Anon.* 348
Bacteria Beds at the Knostrop Sewage Works, Leeds, Remarks on the Flies Breeding in the—. J. E. Dyson and Ll. Lloyd 129
Bacterial Filters, The Treatment of Sewage on—. R. Gaultier 1028
Baltimore Sewage Works, Operation of Pruss Pump at—. C. E. Keefer 835
Bio-Aeration System of Sewage Purification, Advantages of the—. S. Thornhill 620
Biological Purification of Sewage in Sprinkling Filters. H. Blunk 613
Birmingham, Alabama, Planning and Financing Sewage Treatment in—. *Anon.* 348
Britain, Sewage Disposal in—. F. Johnstone-Taylor 838
Building Sewers Under Difficult Conditions. F. C. Ziegler 831
California Regulates Use of Sewage on Crop Land. *Anon.* 162
Canajoharie, N. Y., Incinerator and Sewage Works Combined for—. H. W. Taylor 349
Cannock Sewerage and Sewage Disposal. *Anon.* 133
Carlisle, Pennsylvania, The Sewage Treatment Plant at—. Elton D. Walker 1198
Causes of Sewer Gasification, The—. K. Dau 828
Centrifugal Screen, The—. Wilhelm Seegert 1185
Cheam, Sewage Treatment at Sutton and—. William H. Grieves 825
Checking Corrosion. R. C. Wilson 839
Chemical Purification at Freeport, Long Island. L. L. Luther 635
Chemical Treatment of Sewage, Most Recent Developments in the—. M. J. Blew .. 1206
Chemistry, Handbook of—. N. A. Lange .. 1180
Chlorine for Small Sewers. B. G. S. Robins 347
Chlorination at the Sewage Treatment Plants of Greenwich, Conn. Guy E. Griffin .. 355
Chlorination in Sewage Disposal. *Anon.* 355
City Ordinance Requiring Water Closets where Sewer Connections were Possible Upheld 636
Clarification of Polluted Water, with Particular Reference to Colliery Waste and Sewage, The—. R. D. Gifford 1185
Cleaning Activated Sludge Air Diffusers. W. L. Howe 346
Colliery Waste and Sewage, The Clarification of Polluted Water, with Particular Reference to—. R. D. Gifford 1185
Columbus, Ohio, Intercepting Sewers and Storm Stand-By Tanks at—. John H. Gregory, R. H. Simpson, Orris Bonney and Robert A. Allton 138
Compliance by Municipality with State Health Department's Order Designed to Correct Sewage Pollution of Stream 637
Composition of Leipzig Sewage, The—. K. Viehl 338
Construction of Sewage Fish Ponds as Relief Work. Th. Falck 829
Construction of Wards Island Sewage Treatment Works. Richard H. Gould 137
Contribution to the Treatment of Distillery Waste Waters. O. Acklin, K. Bram and M. Zurcher 1027
Controlling Sludge Level. *Anon.* 838
Corrosion, Checking—. R. C. Wilson 839
Creamery Waste on Filters at Two Iowa Creameries, Purification of—. W. E. Galligan and Max Levine 1015
Decatur Cleanses the Sangamon River. W. D. Hatfield 159
Description of Sewage Treatment Plant at Flint, Michigan. *Anon.* 840
Determination of Moisture in Settled Sludge. H. Bach 340
Determining the pH of Sewage Sludge. Morrill Dakin 833
Dewatering Sewage Sludge by Vacuum Filters at Hagerstown, Md. Wellington Donaldson 836
Disposal by Dilution to Separate Sludge Digestion, From—. *Anon.* 147
Disposal of Surplus Activated Sludge, The—. H. D. Bell 155
Distillery Waste Waters, A Contribution to the Treatment of—. O. Acklin, K. Bram, and M. Zurcher 1027
Dunbar Type, From Trickling Filter to—. Earnest W. Steel 639
Drying and Disposal of Sludge at York Township Sewage Treatment Plant. C. Chamberlain 1034
Drying and Incineration of Sewage Sludge. Alden E. Stilson 833, 1026
Eastleigh, Sewerage and Sewage Disposal in the Urban District of—. F. G. Lee .. 618
Edgerton Sewage Works Help Clean up Rock River Valley, The—. W. G. Kirchoffer 1031
Effect of Bottom Ventilation on Purification by an Experimental Trickling Filter. Max Levine and H. E. Goresline 1028
Effects of Gas Liquor on Sewage Purification. Walter Scott 624
England, Sewage Disposal Improvements in—. *Anon.* 135
Europe, Sewage Treatment Developments in Continental—. Willem Rudolfs 836
Evaluating the Costs of Sludge Disposal Methods.
Part I. The Economics of Sludge Digestion, Dewatering and Disposal. Harry F. Ferguson and W. Homer Wisely 1201
Part II. The Economics of Mechanical Sludge Dewatering and Disposal. Samuel A. Greeley and C. R. Velzey 1203
Exeter, Sewage Purification at—. *Anon.* .. 132
Experimental Station at Foggia for the Purification and Utilization of Sewage in the First Two Years of Its Existence. Girolamo Ippolito 1188
Experiments and Measurements in Connection with the Purification of Sewage. F. C. Vokes 621
Filter Media, Soundness Tests for Sewage—. H. G. Payrow 630
Five Years' Operation of the Milwaukee Activated Sludge Plant. *Anon.* 343
Flint, Michigan, Description of Sewage Treatment Plant at—. *Anon.* 840
Flow Characteristics of Sewage Sludge, Wilhelm Merkel 612
Foggia, The Experimental Station at— for the Purification and Utilization of Sewage in the First Two Years of Its Existence. Girolamo Ippolito 1188
Fort Atkinson, Wisconsin, Sewage Disposal at—. Robert Cramer 832
Freeport, Long Island, Chemical Purification at—. L. L. Luther 635
Galesburg, Operating Results at—. L. W. Hunt 1199
Gas Hazards in Sewers. Kurt Ripperger 611

Gas Hazards in Sewers and Sewage Treatment Plants. R. R. Sayers 633
Gas Liquor, Effects of— on Sewage Purification. Walter Scott 624
Germany, Sewage Disposal in—. E. H. J. Brix, Karl Imhoff, and K. Weldert 335
Greenwich, Conn., Chlorination at the Sewage Treatment Plants of—. Guy E. Griffin 1198
Hagerstown, Maryland, Dewatering Sewage Sludge by Vacuum Filters at—. Wellington Donaldson 836
Hagerstown, Maryland, Sewage Plant, Operating Results of the New—. H. E. Rhodes 1031
Halle (Germany), Additional Settling Tanks for the Tafelwerder Plant in—. Dr. Ing. Heilmann and Dr. Ing. Muller ... 337
Handbook of Chemistry. N. A. Lange 1180
Harmful Effects of Sewage in Rivers, The—. Dr. Ing. Mahr 616
Hourly Load Variations as a Factor in Sewage Treatment Plant Operation. Elson T. Killam 1019
Illinois River, Sewage Disposal by Way of the—. Langdon Pearse 143
Importance of Artificial Lakes for Maintaining the Purity of the Ruhr River. F. Sierp and Hayo Bruns 1182
Incinerator and Sewage Works Combined for Canajoharie. H. W. Taylor 349
Increasing the Salability of Sludge. P. N. Daniels 1204
Indore Process, Sanitary Disposal and Agricultural Utilization of Habitation Wastes by the—. F. K. Jackson and Y. D. Wad 1196
Influence of the Purification by Activated Sludge and Sludge Digestion on the Bacteria of the Coli-aerogenes Group in Sewage. F. Neri 1194
Institute of Sewage Purification, The—. *Proceedings*, 1932 350
Intercepting Sewers and Storm Stand-by Tanks at Columbus, Ohio. John H. Gregory, R. H. Simpson, Orris Bonney and Robert A. Allton 138
Iowa Creameries, Purification of Creamery Waste on Filters at Two—. W. E. Galligan and Max Levine 1015
Irrigating Water, Sewage Treatment for Obtaining Park—. Frank McQueen 145
Japan's Great Industrial Center, Includes Modern Sewage Disposal in Vast Development Program, Osaka—. I. W. Mendelsohn 345
Keeping Our Streams Clean 157
Knostrop Sewage Works, Leeds. Remarks on the Flies Breeding in the Bacteria Beds at the—. J. E. B. Dyson and Ll. Lloyd 129
Laundry Wastes, Treatment of—. J. A. Boyer 1197
Leipzig Sewage, The Composition of—. K. Viehl 338
Liability of City for Sewage Pollution of Stream. *Anon.* 636
Logical Design of Separate Sludge Digestion Plant and Its Effect Upon Other Phases of Sewage Treatment. A. S. Lowe ... 151
Los Angeles Incinerates Sewage Screening. H. G. Smith 1036
Los Angeles, Rational Storm Drain Design Practice in—. *Anon.* 1022
Loss of Head in Activated Sludge Aeration Channels. Darwin Wadsworth Townsend 629
Low Cost Sewage Disposal Plant. R. G. Upton 640
Major Sewerage Project for Toronto, Ontario. Messrs. Metcalf and Eddy and Messrs. Gore, Nasmith and Storrie 142
Maryland-Delaware Water and Sewerage Association 162
Milton, Sewerage and Sewage Disposal of Sitting-Bourne and—. G. T. Cotterell 1024
Milwaukee Activated Sludge Plant, Five Years' Operation of the—. *Anon.* 343
Missouri Water and Sewerage Conference, Report of the Eighth Annual Meeting, Sedalia, Mo. 150
Modernizing and Enlarging an Activated Sludge Plant. Ernest W. Whitlock ... 1020
Most Recent Developments in the Chemical Treatment of Sewage. M. J. Blew 1206
Motherwell and Wishaw, Sewage Disposal at—. *Anon.* 1187
Municipal Sanitation and Sewage Purification. Jose Luis Escario 611
New Edgerton Sewage Works Help Clean up Rock River Valley, The—. W. G. Kirchoffer 1031
New York, N. Y., Rainfall Studies for—. S. D. Bleich 631
Operating Results at Galesburg. L. W. Hunt 1199
Operating Results of the New Hagerstown, Maryland, Sewage Plant. H. E. Rhodes 1031
Operation of Pruss Pump at Baltimore Sewage Works. C. E. Keefer 835
Osaka, Japan's Great Industrial Center, Includes Modern Sewage Disposal in Vast Development Program. I. W. Mendelsohn 345
Phenols, Removal of— from Sewage by Means of Compressed Air. A. Schulze-Forster and L. W. Haase 826
Phoenix Activated Sludge Plant, Two Years' Experience with the—. Percy E. Mauzey 1200
Phoenix, Arizona, Sludge Thickening at—. D. Travaini 834
Planning and Financing Sewage Treatment in Birmingham, Alabama. *Anon.* 348
Prefiltration Treatment of Sewage Sludge. F. W. Mohlman and G. P. Edwards ... 641
Pressure Mains, Sewage Pumps and—. Dir Götze 1180
Problem of Stream Cleansing. Almon L. Fales 157
Proceedings, The Institute of Sewage Purification, 1932 350
Proposed Sewage Disposal Plant for the City of Toronto. *Anon.* 625
Pruss Pump at Baltimore Sewage Works, Operation of—. C. E. Keefer 835
Pumps, Sewage—, and Pressure Mains. Dir Götze 1180
Purification of Creamery Waste on Filters at Two Iowa Creameries. W. E. Galligan and Max Levine 1015
Purification of Wastes from Starch Factories, The—. W. Husmann 342
Rainfall Studies for New York, N. Y. S. D. Bleich 631
Rational Storm Drain Design Practice in Los Angeles. *Anon.* 1022
Recent Developments in Methods of Sewage Works Analysis. John T. Thompson .. 153
Relative Importance of Industrial Wastes in Stream Pollution. L. F. Warrick 158
Remarks on the Flies Breeding in the Bacteria Beds at the Knostrop Sewage Works, Leeds. J. E. B. Dyson and Ll. Lloyd 129
Removal of Phenols from Sewage by Means of Compressed Air. A. Schulze-Forster and L. W. Haase 826
Renovating a Sewage Disposal Plant. P. J. Goodwin 148
Report of the (British) Water Pollution Research Board for the Year Ended 30th June, 1933. H. T. Calvert 820
Report on the Apulian Aqueduct (Italy), 1931–32. Ugo Bono, M. P. 641

Revolving Distributors for Trickling Filters. W. Allen Darby 1025
Rock River Valley, The New Edgerton Sewage Works Help Clean up—. W. G. Kirchoffer 1031
Rockville Center, N. Y., Sewage Clarification at—. *Anon.* 840
Ruhr River, The Importance of Artificial Lakes for Maintaining the Purity of the—. F. Sierp and Hayo Bruns 1182
Sangamon River, Decatur Cleanses the—. W. D. Hatfield 159
Sanitary Disposal and Agricultural Utilization of Habitation Wastes by the Indore Process. F. K. Jackson and Y. D. Wad 1196
Sanitation in Shanghai, China. I. W. Mendelsohn 1032
Screen, The Centrifugal—. Wilhelm Seegert 1196
Self-Purification of Streams, The—. M. Lundie 1196
Sewage, California Regulates Use of— on Crop Land. *Anon.* 162
Sewage Clarification at Rockville Center, N. Y. *Anon.* 840
Sewage Disposal at Fort Atkinson, Wisconsin. Robert Cramer 832
Sewage Disposal at Motherwell and Wishaw. *Anon.* 1187
Sewage Disposal at Stockport, England. *Anon.* 1023
Sewage Disposal by Way of the Illinois River. Langdon Pearse 143
Sewage Disposal Improvements in England. *Anon.* 135
Sewage Disposal in Britain. F. Johnstone-Taylor 838
Sewage Disposal in Germany. E. H. J. Brix, Karl Imhoff, and R. Weldert 335
Sewage Disposal in the Thames Estuary. *Anon.* 134
Sewage Disposal Plant Designed for Economy, A—. Robert Cramer 1033
Sewage Disposal Plant, Low Cost—. R. G. Upton 640
Sewage Disposal Plant, Renovating a—. P. J. Goodwin 148
Sewage, Experiments and Measurements in Connection with the Purification of—. F. C. Vokes 621
Sewage Fish Ponds as Relief Work, The Construction of—. Th. Falck 829
Sewage Pumps and Pressure Mains. Dir Götze 1180
Sewage Purification at Exeter. *Anon.* 132
Sewage Purification, Municipal Sanitation and—. Jose Luis Escario 611
Sewage Screenings, Los Angeles Incinerates—. H. G. Smith 1036
Sewage Sludge.
Determining the pH of—. Morrill Dakin 833
Dewatering by Vacuum Filters at Hagerstown, Md. Wellington Donaldson 836
Drying and Incineration of—. Alden E. Stilson 833, 1026
Flow Characteristics of—. Wilhelm Merkel 612
Prefiltration Treatment of—. F. W. Mohlman and G. P. Edwards 641
Sewage Solids, Aerobic and Anaerobic Decomposition of—. H. Heukelekian 147
Sewage Treatment at Shanghai. Walter C. Buchler 640
Sewage Treatment at Sutton and Cheam. William H. Grieves 825
Sewage Treatment Developments in Continental Europe. Willem Rudolfs 836
Sewage Treatment for Obtaining Park Irrigating Water. Frank McQueen 145
Sewage Treatment Plant Among Attractive Surroundings, A—. E. Bender 148
Sewage Treatment. Plant Operation, Hourly Load Variations as a Factor in—. Elson T. Killam 1019
Sewage Treatment Plants.
Akron, Ohio. A. B. Backherms 637
Canajoharie, N. Y. H. W. Taylor 349
Cannock, England. *Anon.* 133
Carlisle, Pa. Elton D. Walker 1198
Eastleigh, England. F. G. Lee 618
Edgerton, Wisconsin. W. G. Kirchoffer 1031
Exeter, England. *Anon.* 132
Flint, Michigan. *Anon.* 840
Galesburg, Ill. L. W. Hunt 1199
Hagerstown, Md. H. E. Rhodes 1031
Milwaukee, Wis. *Anon.* 343
Phoenix, Ariz. Percy E. Mauzey 1200
Sitting-Bourne and Milton, England. G. T. Cotterell 1024
Springfield Sanitary District. C. C. Larson 149
Stockport, England. *Anon.* 1023
Sutton and Cheam, England. William H. Grieves 825
Toronto, Ontario. Metcalf and Eddy, and Gore, Nasmith and Storrie 142
Wards Island. Richard H. Gould 137
Sewage Treatment Plants, Small—. W. Scott Johnson 839
Sewage Treatment Practice, Some Recent Developments in—. Wellington Donaldson 1033
Sewage Works Analysis, Recent Developments in Methods of—. John T. Thompson 153
Sewerage and Sewage Disposal in the Urban District of Eastleigh. By Frederick G. Lee 618
Sewerage and Sewage Disposal of Sitting-Bourne and Milton. G. T. Cotterell 1024
Sewerage Company Held not Liable for Damages to Land Resulting from Permanent Nuisance where Nuisance Had Existed Before Purchase of Land by Plaintiff 636
Sewer Gasification, The Causes of—. K. Dau 828
Sewers and Sewage Treatment Plants, Gas Hazards in—. R. R. Sayers 633
Sewers, Gas Hazards in—. Kurt Ripperger 611
Sewers Under Difficult Conditions, Building—. F. C. Ziegler 831
Shanghai, China, Sanitation in—. I. W. Mendelsohn 1032
Shanghai, Sewage Treatment at—. Walter C. Buchler 640
Sitting-Bourne and Milton, Sewage and Sewage Disposal of—. G. T. Cotterell 1024
Sludge as a Fertilizer, Akron's—. *Anon.* 1208
Sludge at York Township Sewage Treatment Plant, Drying and Disposal of—. C. Chamberlain 1034
Sludge Digestion.
From Disposal by Dilution to Separate Sludge Digestion. *Anon.* 147
Influence of the Purification by Activated Sludge and Sludge Digestion on the Bacteria of the Coli-aerogenes Group in Sewage. F. Neri 1194
Logical Design of Separate Sludge Digestion Plant and Its Effect Upon Other Phases of Sewage Treatment, The—. A. S. Lowe 151
Sludge Disposal Methods, Evaluating the Costs of—.
Part I. The Economics of Sludge Digestion, Dewatering and Disposal. Harry F. Ferguson and W. Homer Wisely 1201
Part II. The Economics of Mechanical Sludge Dewatering and Disposal. Samuel A. Greeley and C. R. Velzey 1203
Sludge, Increasing the Salability of—. P. N. Daniels 1204
Sludge Level, Controlling—. *Anon.* 838
Sludge, The Determination of Moisture in Settled—. H. Bach 340
Sludge Thickening at Phoenix, Arizona. D. Travaini 834

Small Sewage Treatment Plants. W. Scott Johnson 839
Some Recent Developments in Sewage Treatment Practice. Wellington Donaldson 1033
Soundness Tests for Sewage Filter Media. H. G. Payrow 630
Springfield Sanitary District, Springfield, Illinois, Annual Operation Report, Sewage Treatment Works, 1931 and 1932. C. C. Larson 149
Sprinkling Filters, Biological Purification of Sewage in—. H. Blunk 613
Starch Factories, The Purification of Wastes from—. W. Husmann 342
Stockport, England, Sewage Disposal at—. *Anon.* 1023
Storm Sewer Installation by Relief Work. Knowlton L. Brode 1027
Stream Pollution.
Assessing Damages for Sewage Pollution of Rivers. *Anon.* 348
Compliance by Municipality with State Health Department's Order Designed to Correct Sewage Pollution of Stream 637
Decatur Cleanses the Sangamon River. W. D. Hatfield 159
Harmful Effects of Sewage in Rivers. Dr. Ing. Mahr 616
Importance of Artificial Lakes for Maintaining the Purity of the Ruhr River, The—. F. Sierp and Hayo Bruns 1182
Keeping Our Streams Clean 157
Liability of City for Sewage Pollution of Stream 636
Problem of Stream Cleansing. Almon L. Fales 157
Relative Importance of Industrial Wastes in Stream Pollution. L. F. Warrick 158
Self-Purification of Streams, The—. M. Lundie 1196
Sutton and Cheam, Sewage Treatment at—. William H. Grieves 825
Tafelwerder Plant in Halle, Additional Settling Tanks for the—. Dr. Ing. Heilmann and Dr. Ing. Muller 337
Thames Estuary, Sewage Disposal in the—. *Anon.* 134
Toronto, Ontario, Major Sewerage Project for—. Metcalf and Eddy, and Gore, Nasmith and Storrie 142
Toronto, Proposed Sewage Disposal Plant for the City of—. *Anon.* 625
Treatment of Laundry Wastes. J. A. Boyer
Treatment of Sewage on Bacterial Filters, The—. R. Gaultier 1028
Trickling Filter, Effect of Bottom Ventilation on Purification by an Experimental—. Max Levine and H. E. Goresline 1028
Trickling Filters, Revolving Distributors for—. W. Allen Darby 1025
Trickling Filter to Dumbar Type, From—. Earnest W. Steel 639
Two Years' Experience with the Phœnix Activated Sludge Plant. Percy E. Mauzey 1200
Wards Island Sewage Treatment Works, Construction of—. Richard H. Gould 137
Water Pollution Research Board, Report of the (British)—, for the Year Ended 30th June, 1933. H. T. Calvert 820
West Riding of Yorkshire Rivers Board, 41st Annual Report of the—. (Wakefield, England.) John Garner 823
Wishaw, Sewage Disposal at Motherwell and—. *Anon.* 1187
York Township Sewage Treatment Plant, Drying and Disposal of Sludge at—. C. Chamberlain 1034